

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
11 December 2003 (11.12.2003)

PCT

(10) International Publication Number
WO 2003/101397 A3

- (51) International Patent Classification⁷: **A61K 39/193** (74) Agent: MICHAUD, Susan, M.; Clark & Elbing LLP, 101 Federal Street, Boston, MA 02110 (US).
- (21) International Application Number:
PCT/US2003/017359 (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SI, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 2 June 2003 (02.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/385,013 31 May 2002 (31.05.2002) US (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US 60/385,013 (CIP)
Filed on 31 May 2002 (31.05.2002)
- (71) Applicant (*for all designated States except US*): ACAM-BIS, INC. [US/US]; 38 Sidney Street, Cambridge, MA 02139-4169 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (*for US only*): GUIRAKHOO, Farshad [US/US]; 39 Chestnut Street, Melrose, MA 02176 (US).
- Published:
— with international search report
- (88) Date of publication of the international search report:
26 August 2004
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

WO 2003/101397 A3

(54) Title: TETRAVALENT DENGUE VACCINES

(57) Abstract: The invention provides tetravalent Dengue vaccines, and methods of using these vaccines to prevent or to treat Dengue infection.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/17359

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 39/193

US CL : 424/218.1

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/218.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GUIRAKHOO, et al., Recombinant chimeric yellow fever-dengue type 2 virus is immunogenic and protective in non-human primates. Journal of virology. June 2000, vol 74, no. 12, pages 5477-5485, especially last paragraph on page 5485.	1 AND 11
X	GUIRAKHOO et al, Construction, safety, and immunogenicity in nonhuman primates of a chimeric yellow fever-dengue virus tetravalent vaccine. August 2001, vol 75, no. 06, pages 7290-7304.	1-18
X	PERVIKOV, Development of dengue vaccine. World health organization, dengue bulletin 24, see chimeric vaccine section.	1 AND 11
X	Halstead et al. Rapid review: the future of dengue vaccines. The lancet. 19 October 2002, volume 360, pages 1243-1245. See page 1244.	1 AND 11
—		1 AND 11
P		1 AND 11
X	BONALDO et al. The yellow fever 17d vaccine virus as a vector for the expression of foreign proteins: development of new live flavivirus vaccines. Mem inst oswaldo cruz, rio de janeiro. 2000, vol 95, suppl. 1, pages 215-223, especially pages 218 and 219	1 AND 11

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"B" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

04 September 2003 (04.09.2003)

Date of mailing of the international search report

27 MAY, 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Emily Le

Telephone No. (703) 308-0169

INTERNATIONAL SEARCH REPORT

PCT/US03/17359

Continuation of B. FIELDS SEARCHED Item 3:

EAST, Medline, Scirus, and Google

SEARCH TERMS: TETRA VACCINE YF YELLOW FEVER CHIMERIC CHIMERA DENGUE